Ham-Digital Digest   Fri, 12 Aug 94   Volume 94 : Issue 269

Today's Topics:
                       19.2 or 56 K Packet?
                  ARRL '94 Digital Conf. Update
                        Basic questions
                        convers.c source
              DSP -> what's your favorite algorithm??
                     GTOR--A big improvement?
      Need some help with the design of an Operational Amplifi
                   SMTP for the DataEngine tnc

Send Replies or notes for publication to: <Ham-Digital@UCSD.Edu>
Send subscription requests to: <Ham-Digital-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Digital Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-digital".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Fri, 5 Aug 1994 14:56:18 GMT
From: ihnp4.ucsd.edu!usc!howland.reston.ans.net!torn!nott!bnrgate!corpgate!
nrtphaa9.nt.com!brtph560!nt.com!cmwdr01@network.ucsd.edu
Subject: 19.2 or 56 K Packet?
To: ham-digital@ucsd.edu

Is anyone running 19.2 K or 56 K packet networks?
If so, I like information on the network, equipment used, and software used.
Thanks - Dave.

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Dave Redfearn, SR PC LAN Analyst   Northern Telecom RTP, NC.
ph.(919) 992-3925 email: cmwdr01@nt.com   qrl? de N4ELM/qrp

All opinions are my own and do not necessarily reflect the views of
my employer, co-workers or any other person, real or imaginary.

Date: 4 Aug 94 13:45:18 CST
From: news.cerf.net!gopher.sdsc.edu!news.tc.cornell.edu!news.cac.psu.edu!
news.pop.psu.edu!psuvax1!uwm.edu!src.honeywell.com!The-Star.honeywell.com!
centurio.mavd.honeywell.com!@@ihnp4.ucsd.edu
Subject: ARRL '94 Digital Conf. Update
To: ham-digital@ucsd.edu

        ARRL 13th ANNUAL DIGITAL COMMUNICATIONS CONFERENCE AUGUST 19-21

Do you operate a Digital mode (maybe Pactor, Packet, GTOR or AMTOR) now?
Is it hard to keep up with the latest Digital technology? Would you like to
know more about Digital modes? If "yes" to any of these questions, then
attend the 13th Annual ARRL Digital Communications Conference.

The Conference will be held on August 19 - 21, 1994 at the Thunderbird
Convention Center, 2201 East 78th Street in Bloomington, Minnesota.
Accomodations are available at the Thunderbird Hotel, at hotels and motels
located nearby, and also at several area RV\camper campgrounds.

Enjoy a weekend of fun learning about the latest developments in TCP/IP,
PACTOR, AMTOR, PACTOR-II, CLOVER, G-TOR, PACKET, DSP, and imaging. Participate
in nine forums about DSP, new HF modes, TCP/IP, VHF/UHF networking, BBS
SYSOP issues and more. A glance at the program (attached) will show many
forums that will catch your interest!

A highlight of the conference will be the presentation of technical papers on
many aspects of digital communications throughout the day, Saturday. A list
of papers is attached. You will receive a copy of all papers presented.

Many demonstrations of the latest in hardware and software will be presented.
The conference kicks off Friday evening with an educational forum "The Basics
of Amateur Digital Communications - A Crash Course for Beginners" with
instructor John Kaplan, WR0W. The Saturday evening Technical Showcase will
feature TAPR Special Interest Group meetings for BBS SYSOPs and on VHF/UHF
network building and a technical presentation on "Low Cost HF DSP Modems" by
Johan Forrer, KC7WW.

The Hospitality Room will provide the place to meet old friends and make
new ones. At Saturday's luncheon you will get to know "who's who" in
digital communications. Meet the Engineering staff of manufacturers like
Kantronics and Timewave Technologies. The optional Saturday evening diner
will provide another opportunity to make new friends.

If you want a break from the Conference, the Mall of America, with hundreds
of unique stores, is located within walking distance. The family will
enjoy Knott's Camp Snoopy theme park inside the Mall. The renowned Minnesota
Zoo is only a short drive away.

The Conference registration fee is $45 per person, which includes admission to
all Conference activities, a luncheon buffet and a copy of the technical
papers. An optional Saturday evening buffet is $20 per person additional.
Registration deadline is August 12th.

For more information about the Conference or special Airline and Motel
discounts call or write:
                ARRL Digital Communications Conference
                C/O Paul Ramey WG0G
                16266 Finland Avenue
                Rosemount, MN 55068
                Packet: WG0G@WA0CQG.#MSP.MN.USA.NA
                Telephone: (612) 432-1640
                Internet: PRAMEY@RAM.NET

The host of the 1994 ARRL Digital Communications Conference is the TwinsLAN
Amateur Radio Club.

        See YOU at the Digital Communications Conference August 19-21!

          13th ANNUAL ARRL DIGITAL COMMUNICATIONS CONFERENCE
                        PRELIMINARY PROGRAM

Friday, August 19

TIME   ROOM   EVENT
Noon - 6   PM   TBD   ARRL   "Future   Modes"
                Committee meeting.
Noon - 6   PM   TBD   ARRL   "219-MHz" Committee
                meeting.
4   - 10   PM   Winnebago Conference check-in.
6 PM - 11   PM   Winnebago Hospitality & Demo area are open.
7 PM - 9:30 PM   Yakima   The Basics of Amateur Digital Communications - A
                            Crash Course for Beginners. Instructor: John
                            Kaplan, WR0W.
Saturday, August 20
TIME   ROOM   EVENT
 6:30 -   Noon   Winnebago Hospitality & Demo area open
 7:00 -   Noon   Winnebago Conference Check-in.
 8:00 -   8:15 AM Miami   Conference "Welcome"
 8:30 -   10:00 AM Miami   Technical Paper Presentation
 8:30 -   10:00 AM Arapaho Forum - Developments   in DSP
                For the Amateur. Moderator -

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                         Bob Strickiin, N5BRG
 8:30 -  10:00 AM Choctaw   Forum - TCP/IP - What's next?
                         Moderator - Lew Shannon, K0RR
10:00 -  10:15 AM All     Break
10:15 -  11:45 AM Miami        Technical Paper Presentation
10:15 -  11:45 AM Arapaho   Forum - ARRL  Committee
                 Updates:  "Future Modes":
                 Moderator - Paul Rinaldo W4RI
                 and "219-MHz   Networking":
                 Moderator - Tod Olson K0TO"
10:15 -  11:45 AM Choctaw   Forum - Digital Data   (Voice
                 and Image) Transmission
                 Method Developments.
11:45 -   Noon AM All     Break
Noon  -   1:00 PM Miami        Buffet Luncheon (Included)
 1:00 -   5:30 PM Winnebago Hospitality & Demo area open
 1:15 -   2:45 PM Miami        Technical Paper Presentation
 1:15 -   2:45 PM Arapaho   Forum - High-Speed (above
                  1200  baud) data transfer
                  methods and networking
                  techniques.
 1:15 -   2:45 PM Choctaw   Forum - HF Data Transmission
                  Methods - An    Over-view of
                  Current Modes and What's
                  Coming Next. Moderator -
                         Frank Perkins, WB5IPM
 2:45 -   3:00 PM All     Break
 3:00 -   4:30 PM All     Continuation   of all sessions
 5:30 -   6:30 PM Miami        Buffet Diner   (Optional)
 7:00 -  11:00 PM Winnebago Hospitality & Demo area open
 7:00 -  10:00 PM Miami     Tucson Amateur Packet Radio
                 (TAPR) Presents Packet BBS
                          SYSOP Special Interest Group
 7:00 - 10:00 PM Arapaho   Tucson Amateur Packet Radio
                          (TAPR) Presents VHF/UHF Network
                          Building Special Interest Group
 7:00 -  10:00 PM Choctaw   American Digital Radio
                 Society (ADRS)presents a
                 technical presentation:
                 "A Low Cost DSP Modem for HF Digital
                          Experimentation" by
                 Johan Forrer, KC7WW


Sunday,  August 21

TIME      ROOM        EVENT
 8:30 -   Noon     Winnebago Hospitality & Demo area open
10:00 -  11:00     Winnebago Conference wrap-up and close.
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                13th ARRL Digital Communications Conference Proceedings
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Written by T.C. McDermott, N5EG

15. FSK Modem with Scalable Baud Rate
     Written by Wolf-Henning Rech, N1EOW, and Gunter Jost, KD7WJ;
          Presented by Wolf-Henning Rech, N1EOW.

16. MacAPRS: Mac Automatic Packet Reporting System-A Macintosh Version of APRS
     Written by Keith Sproul, WU2Z, and Mark Sproul, KB2ICI; Presented by
          Keith Sproul, WU2Z.

17. Formation of the TAPR Bulletin Board System Special Interest Group
     Written by David A. Wolf, WO5H; Presented by David A. Wolf, WO5H

18. How Amateur Radio Operators Can Emulate an HF ALE Radio
     Written by David R. Wortendyke, N0WGC; Presented by David R.
          Wortendyke, N0WGC.

19. A Preview of HF Packet Radio Modem Protocol Performance
     Written by Teresa Young, Stephen Rieman, David Wortendyke, N0WGC
          presented by David Wortendyke, N0WGC

20. Designing Rural Telecom Systems for Developing Countries.
          Written by Joseph Lischka, KA0NUZ
          NOTE: This is a hand-out and not in the ARRL Book.

Rev. 8/3/94

Carl Estey | Home Mail Address: 276 Walnut Lane
Amateur Callsign: WA0CQG | Apple Valley, MN 55124
                              | Business Address: Honeywell Inc.
Phone: Work (612) 954-7630 | Flight Systems & Test Operations M/S MN15-2370
       FAX (612) 954-7495 | 1625 Zarthan Ave. S., St. Louis Park, MN 55416
       Home (612) 432-0699 | Packet: WA0CQG @ WA0CQG.#MSP.MN.USA.NA
The nonsense here is of my own making - no one else would want credit!

Date: 10 Aug 1994 19:23:48 -0600
From: mnemosyne.cs.du.edu!nyx10.cs.du.edu!not-for-mail@uunet.uu.net
Subject: Basic questions
To: ham-digital@ucsd.edu

mgalatz@panix.com (Menachem Galatz DC) writes:

>I have a few basic questions

>1) What frequencies are used for packet?

>2) Can a computer/packet modem/radio make a true connection to the internet,
>to connect to e@mail, telnet, etc?

>mgalatz@panix.com

The frequencies depend on what area you live in. In michigan (where I live)
most TCP/IP packet activity is on 147.56 but cross the state line and it
changes.

The answer to question #2 is yes. By using NOS to tell your PC how to "speak"
TCP/IP and how to use your TNC in KISS mode you can. However in order to
become part of the Internet over the air you need to have a packet-radio <-)
Internet gateway that you can reach. You can use digipeater, NET/ROM nodes,
tcp/ip switches, ROSE switches or whatever else you need to get to it
because NOS can encapsulated TCP/IP in to jam ip packets through just about
anything. The sysop of the gateway I use allows us to connect to anything on the
Internet because he's a nice guy and we don't abuse it. Some sysops
opnly let you connect to other amateur systems (IP addresses 44.xxx.xxx.xxx with
in the ampr.org domain) but that depends on your sysop.

Hope I've been of help.
Nate

Date: Wed, 10 Aug 1994 22:03:53 GMT
From: iat.holonet.net!vectorbd!jpll@uunet.uu.net
Subject: convers.c source
To: ham-digital@ucsd.edu

A few years ago... I saw the original Nord crew CONVERS source code
for TNC-2 tnc's on some site. It seems to be gone. I'd like to
look into mod'ing this to work with Linked convers like with JNOS.

Anybody got the *source* code?

TIA es 73's

--
- -
-Jim Lill-   Vector Board BBS
jpll@vectorbd.com   716-544-1863/2645
wa2zkd@wb2psi.#wny.ny.usa.na   GEnie: ZKD

Date: 10 Aug 1994 08:03:31 GMT
From: ihnp4.ucsd.edu!mvb.saic.com!unogate!news.service.uci.edu!usc!
howland.reston.ans.net!vixen.cso.uiuc.edu!ruger-2.slip.uiuc.edu!
user@network.ucsd.edu
Subject: DSP -> what's your favorite algorithm??
To: ham-digital@ucsd.edu

Hello again everyone,

I thought I'd ask this question simply and to the point.

What's your favorite algorithm for ham-related DSP? What have you found
works best for CW, SSB, AM/FM, Data modes?

Most importantly, what do you wish you had on your DSP?

As always, I look forward to comments/suggestions/info that you can send me.

TNX et 73!
Allen Hall   n9rzc@uiuc.edu

Date: 4 Aug 94 11:51:13 EDT
From: ihnp4.ucsd.edu!usc!cs.utexas.edu!swrinde!gatech!dragon!indigo!hayes!
bcoleman@network.ucsd.edu
Subject: GTOR--A big improvement?
To: ham-digital@ucsd.edu

In article <CtpECu.Jrs@freenet.carleton.ca>, ae517@FreeNet.Carleton.CA (Russ
Renaud) writes:
>
> In a previous article, bcoleman@hayes.com (Bill Coleman) says:
>>
>>Mutiple tones is the way to go for HF. You have to keep the symbol rate low
>>and avoid phase modulation to avoid multipath phase distortion. You can't
>>get too many states of amplitude modulation because the signal references
>>change too much. It is nearly impossible to equalise a lot of the
>>imperfections of the HF link since they change so rapidly. Your only choice is
>>to use more tones.
>
> I thought the military found that the single-tone serial modems proved
> superior to the parallel tone modems under most HF conditions.

Which raises two questions. 1) Does the military use HF in the same way
that hams do? and 2) What sort of transmitting, receiving and modem
apparatus does the military consider "reasonable" for such a circuit.

> We are using some parallel tone modems (1200 baud) at work and were
> thinking of changing them out next year for the single tone modems
> (maybe Harris).

1200 baud on HF? Must be right at the MUF. No way you could get that kind
of symbol rate much lower in frequency, unless you've got some kind of
multipath equalization. Sounds tough (read expensive).

> I wonder if the AEA DSP modems would be capable of the fed standard HF
> protocols. 4800 baud signalling rates on the ham bands would be nifty.

4800 baud HF packet would be illegal. The regulations limit us to use 300
baud below 10 meters. 1200 baud is permitted on 10 meters.

(Note that baud != bps)
--
Bill Coleman, AA4LR   ! Internet: bcoleman@hayes.com
Principal Software Engineer   ! AppleLink: D1958
Hayes Microcomputer Products, Inc. ! CIS: 76067,2327
POB 105203 Atlanta, GA 30348 USA   !
Disclaimer: "My employer doesn't pay me to have opinions."
Quote: "The same light shines on vineyards that makes deserts." -Steve Hackett.

Date: Wed, 10 Aug 1994 06:10:47 +0000
From: ihnp4.ucsd.edu!agate!howland.reston.ans.net!pipex!demon!llondel.demon.co.uk!
dave@network.ucsd.edu
Subject: Need some help with the design of an Operational Amplifi
To: ham-digital@ucsd.edu

In article <1994Aug9.001615.70243@kuhub.cc.ukans.edu> christos@kuhub.cc.ukans.edu
writes:
>hello there,
>
>   I have a question concerning design of a simple amplifier using
>operational amplifiers. I am simply designing a noninverting amplifier with a
>gain of 2, that is R1=R2 (Closed Loop Gain=(1+R2/R1)). No matter what I apply
>to the input of the amp the output always saturates to -11 Volts. Even if no
>input is applied the output still gives a -11V.
>The voltages that I am applying to the Vcc+ and Vcc- of the op amp are +12V and
>-12V respectively. I am using the LM 741 opamp for this application.
>
I suppose we ought to get the obvious ones out of the way first....

You have got the feedback resistors connected correctly? Output to the
inverting input and the inverting input to 0V. The non-inverting input
should be biased to live at 0V unless pulled off by the input voltage.

Dave
--

```
*****************************************************************************
* G4WRW @ GB7WRW.#41.GBR.EU AX25     *                                      *
* dave@llondel.demon.co.uk  Internet *  Stop the World! I want to get off!  *
* g4wrw@g4wrw.ampr.org       Amprnet  *                                      *
*****************************************************************************
```

Date: 11 Aug 94 15:22:32 GMT
From: news-mail-gateway@ucsd.edu
Subject: SMTP for the DataEngine tnc
To: ham-digital@ucsd.edu

Hi to everyone from IK5MIC.

I would like to know if the JNOS for the Kantronics DataEngine works also with
SMTP, POP, and NNTP.
I know the DE's RAM is not so large, but has anybody tried to expand it?

Using the DE as a TCP/IP mailbox would be more energy-saving then leaving my
68040-Mac on for the whole day (-:

Thank you in advance, please reply to ik5mic@radio-gw.cnuce.cnr.it address.

Alessandro.

```
              _\\///_
             (' O O ')   Wake up: try TCP/IP !
 ---------------ooO-(_)-Ooo----------------------------------------------
| ik5mic is:            ik5mic.ampr.org       IP [44.134.208.178] |
| Alessandro Sbrana          e-mail -> ik5mic@radio-gw.cnuce.cnr.it |
| Viale delle Piagge 6      ax25 bbs -> (Pisa, Italy) iw5bde-8      |
| 56124 PISA Italy                    -> (Texas, U.S.A.) f6cnb-4    |
| phone (+39) 50 570038     p.cluster -> (Pisa, Italy) ik5pwj-6     |
 ------------------------------------------------------------------------
```

Date: 11 Aug 1994 16:26:24 GMT
From: newsgw.mentorg.com!wv.mentorg.com!hanko@uunet.uu.net
To: ham-digital@ucsd.edu

References <1994Aug10.141728.15785@ke4zv.atl.ga.us>,
<32bf2k$h2d@hpbab.mentorg.com>, <32cf4j$obe@crcnis1.unl.edu>

In article <32cf4j$obe@crcnis1.unl.edu>, mcduffie@unlinfo.unl.edu (Gary McDuffie
Sr) writes:
|> hanko@wv.mentorg.com (Hank Oredson) writes:
|>
|> >In article <1994Aug10.141728.15785@ke4zv.atl.ga.us>, gary@ke4zv.atl.ga.us
(Gary Coffman) writes:
|>
|> >|> We are building more robust and capable network links, so digi Dxing
|> >|> should eventually become too boringly easy to attract your interest.
|> >|> Until then, keep in mind what you may be doing to the forwarding
|> >|> network by digi Dxing, and try to control the impulse to download
|> >|> files from distant systems. Get the copy from your LAN BBS instead.
|> >|>
|> >|> Gary
|>
|> >But here in the O.P.E.N. network we encourage folks to play around
|> >any way they want. DXing BBS can be fun (and that's what the
|> >network is for - to have fun). Once you get to the Idaho nodes,
|> >you can get to us here in the Portland Metro area. Lots of nodes,
|> >lots of bbs, a linked RoundTable server that ties ten nodes together,
|> >and you are certainly welcome to network on in and play.
|>
|> >Oh yes: O.P.E.N. means "Oregon Packet Experimenters Network",
|> >and our motto is "Do anything you like, any time you like,
|> >for any reason you like."
|>
|> Hmm...and all these years I thought that was Woodstock!
|>
|> Seriously, Hank, I don't think there are many areas that can (do)
|> support that sort of operation. It's a nice thought, but rarely
|> found.
|>
|> Around here, the network was built by the BBS people to support the
|> BBS traffic. The population won't support much more than that. DXing
|> nodes is actively discouraged. I'm not saying it's ideal, or
|> desirable, just reporting the facts. After nearly 8 years of being
|> the sole support for the local "network", we are finally getting a few
|> more people interested in something more exotic. Improvements will
|> come, but they will be very slow.
|>
|> Gary

The situation here is much the same ... or rather most of the folks who
are building the network also run their own bbs, and most of those bbs
ARE the network nodes. My system, for example, has two 9600 baud ports

which support point-to-point links between major subnets, two 1200 baud
ports that support point-to-point links between minor subnets, two ports
specifically for user access. Most of the other systems are 4-6 port
systems - gathering the gear together like this and providing multiple
paths between any two points results in a very robust network. Were my
system to go off air, everything else would still be connected.

In this area the "BBS people" understand that their sole purpose in life
is to have fun while doing the best job they can serving the "users".
"users" are folks that have not put tcp/ip or their own bbs on the network
YET. They will do so eventually. We do get lots of questions like "Is it
ok if I download this 100k file at 8 PM", but folks rapidly figure out that
it IS ok, and in fact is encouraged. The network is set up so doing things
like this do NOT impact the other users very much, and in fact work just
fine.

So we have these few simple guidelines like the "Do anything you like ...",
and "A packet must never leave a node on the same port it entered" and
"A backbone link freq has two radios, but can support three in emergency"
and "Don't put the nodes on the TOP of the mountains." Mostly just
common sense stuff which, when you do it, makes an excellent network.

And yes, we DO have problems, but then we all work together and solve them.

It's really kind of simple ...

    ... Hank

--

Hank Oredson @ Mentor Graphics   Library Operations
Internet   : hank_oredson@mentorg.com   "Parts 'R Us!"
Amateur Radio: W0RLI@W0RLI.OR.USA.NOAM

End of Ham-Digital Digest V94 #269
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